2.4 Socioeconomic Variables

The trip generation models in the AZTDM use household data and employment to estimate travel activity. Special generators are used for major airports, universities, national parks, and military installations.

Households
The AZTDM uses estimates of households by STAZ for trip generation. A household is a person or group of people who occupy a dwelling unit as their usual place of residence. For trip generation, the AZTDM categorizes STAZ households based on income, the number of workers per household, and the number of persons per household, using input from the year 2000 Census Transportation Planning Package (CTPP).

Employment
The AZTDM use three broad employment classifications in its trip generation model:

- Industrial Employment
- Service Employment
- Retail Employment

Industrial sector employment broadly includes construction, mining, and other resource extraction jobs, as well as manufacturing. Service sector employment broadly includes financial, insurance, real estate, transportation, health, legal, government, and other services. Retail sector employment broadly includes retail and wholesale trade.

Special Generators
Key special generators for both work and non-work trips include Phoenix Sky Harbor International Airport, Tucson International Airport, Fort Huachuca, Yuma Proving Grounds, Davis-Monthan Air Force Base, Luke Air Force Base, Grand Canyon National Park, University of Arizona, Arizona State University, and Northern Arizona University. National Forest lands are also a special generator work and non-work trips.

Population
As population is not explicitly used in the AZTDM to estimate travel activity. population estimates are provided for reference only. The AZTDM population estimates do not include people living in group quarters. Group quarters include college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities workers' dormitories, and facilities for people experiencing homelessness. The AZTDM population estimates represent people living in households.

2.5 Year 2005 Socioeconomic Data

Household and employment data was compiled from numerous sources to prepare a base year 2005 socioeconomic database. Sources for each of the seven study areas are detailed in the text below. Table 2-1 shows year 2005 population and employment estimates by county. Figure 2-17 shows Arizona estimated population and employment density for years 2005, 2030, and 2050. Figures 2-18 to 2-32 show the estimated year 2005 population density together with projected employment density for years 2030 and 2050 by county. Appendix A shows detailed population and employment estimates by STAZ for each county.

As a reasonableness check, the ADOT team compared the AZTDM population estimates compiled for each study area with Census 2000 population counts and year 2005 DES

population estimates. Where necessary, the study team adjusted the AZTDM database for consistency with both census and DES estimates.

Similarly, the ADOT team compared year 2005 AZTDM employment estimates with year 2005 DES employment data and year 2005 Census County Business Patterns employment data. Where necessary, the study team adjusted the AZTDM database for consistency with state and federal employment data.

Table 2-1 Year 2005 Population and Employment Estimates

County	Population[1]	Employment			
		Industrial	Service	Retail	Total
Apache	74,300	900	16,700	1,800	19,400
Cochise	133,400	4,500	36,500	6,800	47,800
Coconino	127,100	6,900	38,000	17,200	62,100
Gila	52,200	1,700	8,400	1,800	11,900
Graham	33,600	900	6,000	1,600	8,500
Greenlee	9,200	2,400	1,000	200	3,600
La Paz	21,100	700	2,200	1,200	4,100
Maricopa	3,672,400	357,700	923,300	466,500	1,747,500
Mohave	199,300	10,200	26,200	21,400	57,800
Navajo	104,300	3,800	20,200	5,500	29,500
Pima	918,100	73,800	223,500	102,200	399,500
Pinal	261,600	6,200	26,200	12,600	45,000
Santa Cruz	40,900	2,500	6,500	4,200	13,200
Yavapai	200,500	12,300	32,300	15,200	59,800
Yuma	173,000	15,900	30,800	13,400	60,100
Total	**6,021,000**	**500,400**	**1,397,800**	**671,600**	**2,569,800**

Source: ADOT Project Team, August 2008.

Notes: 1) Population living in households.

2.5.1 Eastern Framework Study Area

The Eastern Framework study area includes Cochise, Santa Cruz, Graham, and Greenlee counties, and parts of Gila, Apache, Coconino, and Navajo counties. The ADOT Project Team compiled population and employment estimates from the following sources:

- Southeast Arizona Regional Transportation Profile, Working Paper #1, Existing and Future Conditions, March 2007.
- Gila County Small Area Transportation Study, 2006.
- Labor Force and Non-farm Employment 2005 (Prepared in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics, by State of Arizona, Department of Commerce, Research Administration).
- Arizona Subcounty Population Projections, July 1, 2006 to July 1, 2055, by County, Census County Division, Place, and Reservation (DES, 12/01/06).
- Census 2000.

2.5.2 Central Framework Study Area

The Central Framework study area includes portions of Pinal County and Gila County. The ADOT Project Team compiled population and employment estimates from the following sources:

- Pinal County Regionally Significant Routes Travel Demand Model, 2007.
- Gila County Small Area Transportation Study, 2006.
- Labor Force and Non-farm Employment 2005 (Prepared in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics, by State of Arizona, Department of Commerce, Research Administration).
- Arizona Subcounty Population Projections, July 1, 2006 to July 1, 2055, by County, Census County Division, Place, and Reservation (DES, 12/01/06).
- Census 2000.

2.5.3 Western Framework Study Area

The Western Framework study area includes Mohave, La Paz and Yuma counties. The ADOT Project Team compiled population and employment estimates from the following sources:

- Laughlin-Bullhead City Subarea Model existing (2004) population and employment by TAZ.
- County Population Projections (DES and COG/MPO Planning Agencies, 2008).
- Labor Force and Non-farm Employment 2005 (Prepared in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics, by State of Arizona, Department of Commerce, Research Administration).
- Arizona Subcounty Population Projections, July 1, 2006 to July 1, 2055, by County, Census County Division, Place, and Reservation (DES, 12/01/06).
- Kingman Subarea Model existing (2005) and future (2020) population and employment by TAZ.
- Lake Havasu City Subarea Model existing (2005) and future (2030) population and employment by TAZ.
- YMPO 2006-2029 Regional Transportation Model existing (2005) and future (2029) population and employment by TAZ.
- Census 2000.

2.5.4 Northern Framework Study Area

The Northern Framework study area includes Yavapai County and portions of Apache, Coconino, and Navajo counties. The ADOT Project Team compiled population and employment estimates from the following sources:

- City of Page SATS, 2007.
- Chino Valley SATS, 2006.
- FMPO Year 2005 Travel Demand Model.
- CYMPO Year 2005 Travel Demand Model.
- Labor Force and Non-farm Employment 2005 (Prepared in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics, by State of Arizona, Department of Commerce, Research Administration).
- Arizona Subcounty Population Projections, July 1, 2006 to July 1, 2055, by County, Census County Division, Place, and Reservation (DES, 12/01/06).
- Census 2000.

The FMPO converted the detailed year 2005 land use data in its model to population and employment estimates for use in the AZTDM. The year 2005 CYMPO data was transferred to the AZTDM.

2.5.5 Hidden Valley Framework Study Area

The ADOT Project Team used year 2005 data from the Pinal County Regionally Significant Routes Travel Demand Model for the Hidden Valley Framework portion of Pinal County. Year 2005 MAG data was used for the Maricopa County portion of the study area.

2.5.6 Maricopa Association of Governments

MAG provided its most recent year 2005 population and employment estimates for Maricopa County. The STAZ geography is consistent with MAG TAZ geography, so that the geographic aggregation is a straightforward process. The ADOT Project Team coordinated with MAG to identify the proper relationships between attributes to aggregate the MAG database for use in the AZTDM.

2.5.7 Pima Association of Governments

PAG provided its most recent year 2005 population and employment estimates for Pima County to the ADOT Project Team. The STAZ geography is consistent with PAG TAZ geography, so that the geographic aggregation is a straightforward process. The ADOT Project Team coordinated with PAG to identify the proper relationships between attributes to aggregate the PAG database for use in the AZTDM.